

Screening for anal precancerous lesion and cancer in Japan



Naokatsu Ando¹, Daisuke Mizushima¹, Misao Takano¹, Hiroshi Kitamura¹, Daisuke Shiojiri¹, Seitaro Abe¹, Akira Kawashima¹, Takato Nakamoto¹, Takahiro Aoki¹, Shinichi Oka¹, Hiroyuki Gatanaga¹

1. AIDS Clinical Center, National Center for Global Health and Medicine, Tokyo, Japan



Background

Screening for anal cancer among patients living with HIV (PLH) is increasingly recognised because HIV is one of the most significant risk factors, and interventions for precancerous lesions reduce the development of anal cancer [1,2,3]. This study reports the results of initial screening with anal Pap smear (APS) and HPV genotype, including precancerous and cancerous lesions.

Method

Between May 2019 and July 2023, men who have sex with men (MSM) aged 18 and older underwent APS and HPV genotyping at the National Centre for Global Health and Medicine, Japan. If APS showed Atypical squamous cells of undetermined significance (ASC-US) or worse and high-risk HPV was positive, participants were recommended to receive a biopsy under high-resolution anoscopy (HRA). Comprehensive biopsies, defined as at least six different sites regardless of the presence or absence of visible abnormalities, were conducted in this study.

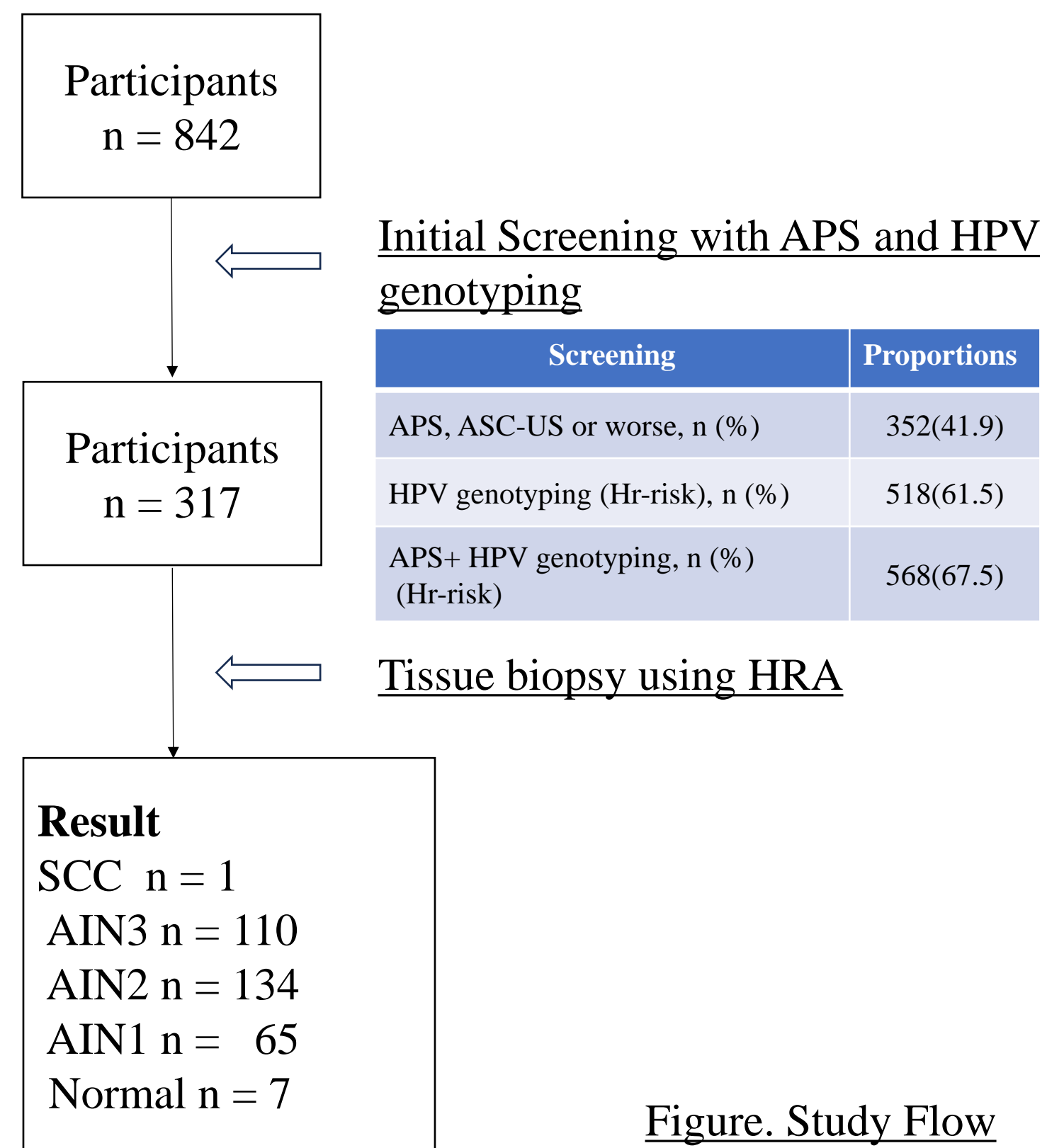
Our study showed that **Two in three people required detailed screening using HRA. Furthermore, secondary screening revealed that **three in four** people needed interventions to prevent the development of anal cancer.**

Results

A total of 842 individuals were included, with a median age of 44 (IQR 36-51). Among them, 612 (72.7%) participants were living with HIV, and 230 (27.3%) were without HIV. Initial screening showed that 353 (41.9%) had APS results of ASC-US or worse. HPV genotyping revealed that 518 (61.5%) individuals had ASC-US or more abnormalities or high-risk HPV. Following the initial screening, 317 (37.6%) participants underwent biopsy with HRA, of whom 262 (82.6%) were living with HIV and 66 (17.4%) without HIV. Biopsy results showed one case (0.3%) of squamous cell carcinoma, 110 (34.7%) cases of anal intraepithelial neoplasia (AIN) 3, 134 (42.3%) cases of AIN2, 65 (20.5%) cases of AIN1, and 7 (2.2%) with no abnormality as the worst result among the six biopsy sites.

	All	HIV	Non-HIV	p-value *
Number, initial screening	842	612	230	
Age, year [IQR]	44 [36 - 51]	46 [39-52]	38 [31-44]	<0.001
Sex [men], %	100	100	100	
APS				
NILM, n [%]	489 [58.1]	322 [52.6]	167 [72.6]	<0.001
ASC-US, n [%]	256 [30.4]	211 [34.5]	45 [19.6]	<0.001
ASC-H, n [%]	49 [5.8]	41 [6.7]	8 [3.5]	0.075
LSIL, n [%]	26 [3.1]	22 [3.6]	4 [1.7]	0.166
HSIL, n [%]	22 [2.6]	16 [2.6]	6 [2.6]	0.996
HPV genotyping				
Hr-HPV, n [%]	518 [61.5]	416 [68.0]	102 [44.3]	<0.001
HPV16, n [%]	138 [26.5]	114 [18.6]	24 [10.4]	0.004
HPV18, n [%]	74 [8.8]	62 [10.1]	12 [5.2]	0.025
Hr-HPV + APS, n [%]	568 [67.5]	448 [73.2]	120 [52.2]	<0.001
Number, secondary screening	317	262	55	
Age, year [IQR]	45 [37-52]	46.5 [40-52]	39 [31-47]	<0.001
Tissue biopsy with HRA				
Normal, n [%]	7 [2.2]	6 [2.3]	1 [1.8]	0.829
AIN 1, n [%]	65 [20.5]	55 [21.0]	10 [18.2]	0.639
AIN 2, n [%]	134 [42.3]	108 [41.2]	26 [47.3]	0.409
AIN 3, n [%]	110 [34.7]	92 [35.1]	18 [32.7]	0.735
SCC, n [%]	1 [0.3]	1 [0.4]	0 [0]	0.646

Table. Screening Outcomes for Anal Cancer * t-test or chi-square test was used to compare the HIV and non-HIV groups



Conclusions

Initial screening with combined APS and HPV genotype indicated that **two in three people required detailed screening using HRA**. Furthermore, secondary screening revealed that **three in four people needed interventions to prevent the development of anal cancer**. Given the high demand for testing, it is essential to establish a robust screening system to adequately address and manage this demand.

Contact: Naokatsu Ando, M.D., Ph.D
 E-mail address: nandou@hosp.ncgm.go.jp